



Highlight of the Month: Composting

Spreading compost in vineyards builds soil health by adding nutrients and improving the physical structure. Compost can help control erosion, resist disease, enhance the productivity of the vines and reduce waste sent to the landfill.

Composting for Wine Quality and Disease Resistance at Shenandoah Vineyards/Sobon Estate

Amador vintner Leon Sobon is convinced that years of building soil health with organic matter has kept his grapevines productive and more resistant to disease. When he and his wife, Shirley, founded Shenandoah Vineyards in 1977, the vines were planted on their own roots, making them vulnerable to phylloxera later on. Then they acquired an historic winery and vineyards in 1989 to start Sobon Estate, which included phylloxera-infested acreage that was 60 percent grafted with resistant rootstock. Farm equipment has been transferred without cleaning between the two vineyard properties, yet the presence of phylloxera has not affected any of the vines at the family's collective 160 acres. The old vine Zinfandel and Rhone varieties for the family's 25,000-case production are thriving on the steep hillsides of volcanic soils, terraced with cover crops and layers of

compost. "We know we've moved phylloxera bugs through farm equipment from Sobon

phylloxera." Composting is among the arsenal of sustainable practices that the Sobon

Photo courtesy Shenandoah Vineyards/Sobon Estate



Paul Sobon, assistant winemaker/vineyard manager at Shenandoah/Sobon Estate, turns the compost pile to aerate, mix and breakdown the organic matter.

Estate to Shenandoah Vineyards, but they haven't hurt the vines since we started farming organically in 1989 at our wineries," says Sobon. "It's all supposition, but the soil has come into balance with the

family uses to maintain healthy soil and vines. They purchase compost but also make 50-100 tons of their own by mixing grape pomace from their winery, steer manure, and paper shavings from the winery

office. Although they must carefully cull cellophane and coated papers from the paper waste, the shavings have proved to be a good source of carbon and have helped keep down compost odors. The compost is piled in windrows and turned four to five times a year for aeration.

"Compost is more expensive than synthetic fertilizers, but adds life to the soil," says Sobon. "It supplies bacteria, different kinds of phytonutrients and trace elements. It's only logical to replenish the soils with what the grapes need."

Sobon adds that his vineyards are dry farmed, so the compost helps hold the water better. The organic bulk also improves tilth so the water and roots can penetrate the soil more easily.

Growing vegetables in an organic garden at his former home in Los Altos gave Sobon the realization that what was produced was better.

"We farm organically simply because we can make better wine as well as preserve the environment. All farmers are environmentalists. We have the most stake in it because the land is our livelihood."

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Benefits of Composting:

- ☞ Provides plant nutrients and can help fix problems with pH, salinity and more
- ☞ Improves soil structure for better water and air penetration
- ☞ Increases soil water-holding capacity
- ☞ Enhances soil health to help fight disease
- ☞ Increases beneficial microorganisms
- ☞ Can improve vine productivity and the long-term viability of the land
- ☞ Reduces solid waste deliveries to landfills by recycling natural materials taken off the vineyard and making them usable for soil improvement

Potential Trade-Offs:

- ☞ Requires soil and plant sampling to determine soil amendment or specific problem. Tests are not always reliable because of variability of soil, uptake of rootstocks and other vineyard conditions.
- ☞ Certain composts supply different nutrients
- ☞ May require research in locating supplier of compost containing no residual pesticides or herbicides
- ☞ May require initial investment for equipment such as compost spreaders
- ☞ Could be more expensive than synthetic fertilizers in the short run

Scheid Vineyards Finds Composting Economically Feasible



Straw is layered on the compost windrow (at left) to add organic matter, while a tractor (above) turns and aerates the humus.

Photos courtesy of Scheid Vineyards.

As the vineyard management company for Diageo Chateau & Estate Wines' San Benito Vineyard, Scheid Vineyards has worked with the direction of Diageo's winegrowing team to produce 1200 tons of compost annually for use on 800 acres. The compost program has improved soil structure and fertility, and increased biological activity to help control nematodes and save costs.

Scheid has found that being near the center of many agribusiness commodities on the northern portion of the Central Coast has provided several economic advantages for making compost. The region has more cost-effective equipment resources than most other places and plenty of open space in which to make the compost.

Scheid was able to buy used composting machinery from a large composting company that outgrew their

perfectly good equipment. They obtained a tractor to make windrows, a chopper, compost spreader, and equipment for watering and turning. They also made a small investment in a truck for hauling. The composting operation saves Diageo \$30,000 in shipping fees alone that were spent each year for transporting grape pomace out of the area.

"There are advantages to being where we are. Finding used equipment to buy justified our investment, and the volume of compost that is produced provides enough economies of scale. We knew the savings would offset the cost of composting," says Kurt Gollnick, chief operations officer at Scheid. "The biggest challenge is locating enough raw organic material to make more compost. We could use five times more."

"Equally as important as cost was the need to build the organic matter of the vineyards," explained

Gollnick. "The soils had been farmed for a long, long time. The natural systems needed to be maintained by boosting the biological activity and freeing up more nutrients for uptake by the vines."

Scheid makes the compost onsite at Diageo's Paicines winery. The facility has adequate space available to make compost and odors have not been a problem. They add manure and shredded straw to the pomace, and turn and add water to mix the windrows and prevent overheating. A lab analysis provides a report on the nutritional values of the compost before it is spread in the vineyards at a rate of two-to-four tons per acre annually.

"We're working for greater productivity for the long-term," says Gollnick who says the compost program started two years ago. "It will take many years to build the soils, but it will start to add up."

Using Biodynamic Compost at Topolos at Russian River Vineyards

Packing cow horns with manure and burying them in the ground according to the phases of the moon seem an unlikely method for producing incredible taste and fragrance in wine. Yet for vintner Michael Topolos, the strategy is practical and effective for his 18,000 cases.

The decomposed manure and horn silica are dug up and diluted in rain or well water to make a homeopathic spray, which is applied to his compost pile to strengthen it. The compost itself is a mixture of 60% organic cow manure, 20% organic horse manure, 10% organic bird manure, and 10% grape pomace from

his winery, all combined with an equal amount of straw. To further stimulate the life and health of the humus, Topolos adds several herbs, including yarrow, chamomile, stinging nettle, oak bark, dandelion and valerian.

This elaborate compost formula is one of several remedies based on the biodynamic agriculture philosophy of Austrian scientist Rudolf Steiner. In the 1920s, Steiner was asked by German farmers, soil scientists and veterinarians to develop solutions for the deteriorating crop quality and livestock health, stemming from agricultural chemicals. Central to his biodynamic philosophy is

soil fertility.

A vintner since 1978 and an organic winegrower for most of those years, Topolos first embraced the biodynamic methodology in 1996 when he tasted an intensely flavored Fuji apple that had been grown according to Steiner's philosophies.

"The snap, perfume and taste of the apple were so amazing. It kept me satisfied for a full eight hours," says Topolos. "It was then that I wanted to bring biodynamic viticulture to my wines."

With biodynamic preparations, Topolos says the productivity of his dry farmed old vine Zinfandel acreage can be extended for a decade or two. In another vineyard, he changed the pH of the soil in one year with six ounces of a #501 Horn Silica field spray, something that would have taken five tons of lime to do the same thing. Because of the remedies, he only does two sulfur applications a year instead of 10. His work has earned him the 1999 Environmental Business of the Year Award from the Sonoma County Conservation Council and recognition as the 1998 Biodynamic Winemaker of the Year from the American Biodynamic Society.

"I never did like working with chemicals, and I didn't like asking other people to do what I was unwilling to do," says Topolos. "We would rather partner with Mother Nature than dominate her. She always wins

Resources:

☞ *California Integrated Waste Management Board*. See "On-Farm Composting" at www.ciwmb.ca.gov/Organics/Farming/OnFarm.htm. Comprehensive site contains how-to information, regulations, resources, a list of compost and mulch suppliers, and free downloadable publications.

☞ *Appropriate Technology Transfer for Rural Areas*. Links to composting resources. www.attra.org/attra-pub/farmcompost.html

☞ *Compost Production and Utilization: A Growers' Guide*. Oakland: Univ. Calif. Div. Agric. Nat. Res. Publ. 21514, 1995. <http://anrcatalog.ucdavis.edu/merchant.ihhtml?pid=546&step=4>

☞ *Composting Equipment*. www.recycle.cc/resource.htm

because she works 24 hours a day. The ideal is to create health and balance in the vineyard so that we only have to prune and pick. I don't want to contribute to degrading the environment. I want to leave my two boys a legacy."

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Vintner Michael Topolos prepares to bury horn manure, later to be made into a biodynamic spray for application on compost.



THE CODE OF SUSTAINABLE WINEGROWING PRACTICES



In early 2001, leadership and funding from Wine Institute and the California Association of Winegrape Growers (CAWG) led to the formation of a committee to develop a “Code of Sustainable Winegrowing Practices.” This proposed voluntary program, establishing statewide guidelines for sustainable farming and winemaking, is nearly complete and is expected to be introduced to the wine community this fall.

Purpose: The purpose of the project is to enhance the California wine industry’s leadership role in responding to pressures resulting from population growth, public and legislative attitudes, environmental decisions from regulatory and governmental bodies, and other growth-related issues. The new Code, and its implementation, can greatly augment the industry’s collective and unified ability to accommodate these pressures, while assuring that future generations can produce the finest world-class wines. The goal of the Code is to “promote farming and winemaking practices that are sensitive to the environment, responsive to the needs and interests of society-at-large, and economically feasible in practice.” In a recent address to Wine Institute’s Board of Directors John De Luca characterized the proposed Code as “most likely the greatest legacy we can create for the wine community, our larger society, and generations yet unborn.”

Project Summary: More than 50 Wine Institute and CAWG members, as well as outside stakeholders such as representatives from Cal/EPA and independent farm advisors, sit on the committee spearheading the project. Committee Chair Michael Honig leads work on this first-ever statewide initiative, which will include a system to measure the voluntary industry input from vineyards and wineries. The data collected from the project will be used to benchmark the wine community’s progress on sustainability and target educational campaigns where needed. The winegrowing portion of the guide book will build upon the successful programs of the Lodi-Woodbridge Winegrape Commission and the Central Coast Vineyard Team. Feedback from regional grower and vintner associations and a wide range of academia, environmental and social equity communities has played an important role in the Code development. Dr. Jeff Dlott of RealToolbox, a sustainable agriculture and resource conservation consulting firm, has been contracted to help oversee the project and measurement system.

Next Steps: At Wine Institute’s June 2002 Annual Meeting of Members, the Institute Board of Directors provided comment and approved a complete 490-page draft of guidelines for the Code of Sustainable Winegrowing Practices. The committee and Institute staff have also obtained outside comment of the approved draft by environmental and social equity groups, university educators, regulators and other industry experts. The Code is expected to be introduced in October, 2002.

To attract additional implementation funds for this project, the Wine Institute Board has established a 501(c)3 nonprofit, non-lobbying foundation in conjunction with the California Association of Winegrape Growers. This was necessary as many philanthropic organizations donate solely to 501(c)3 groups. Named the California Sustainable Winegrowing Alliance, this entity will help advance the adoption of sustainable viticulture and winemaking practices through research and education. Bylaws have been approved and a board of trustees has been appointed by both Wine Institute and CAWG. For more information on the project, go online to www.wineinstitute.org/communications/SustainablePractices/vision.htm or call the Communications Department at 415/356-7520.

Upcoming topics for “Highlight of the Month” publications are as follows:

☞ ☞ October – “Controlling Erosion” * ☞ November – “Protecting Air and Water Quality”

☞ December – “Attracting and Retaining Good People”

☞ Topics of a seasonal nature are matched to the time of year when the practice takes place.

The practice of “Composting,” highlighted in this issue, pertains to the Code of Sustainable Winegrowing Practices in the following areas: Viticulture; Soil Management; Vineyard Water Management; Pest Management; Wine Quality; Ecosystem Management; Winery Water Quality and Water Conservation; Solid Waste Reduction and Management; Neighbors and Community.

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